

Dmitry Payson

דמיטרי פייסון

- D. of Sci in Economics (Central Economics and Mathematics Institute, Russian Academy of Science, 2011, thesis topic "Institutions and Institutional Design in Space Activities");
- PhD (Moscow Aviation Institute, 2003, spacecraft design issues with consideration of economic factors);
- Spacecraft engineer (Moscow Aviation Institute, 1994)

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Experience



2020-2022: Managing Director, Sber Research and Innovation Center



2014-2018: Director, Roscosmos/United Rocket and Space Co. Research and Analysis Center



2011-2014: Deputy Director, Skolkovo Foundation Space Cluster



2005-2011: Research positions in TsNIIMash, Roscosmos lead research institute

Teaching / Lecturing



**Moscow State
University**



**Skoltech
University**



**International Space
University**



**RUDN
University**



**Moscow Aviation
Institute**



**Moscow Institute for
Physics and Technology**

Major Publications

1. Payson, D. New Space and Newest Space // Outer Space Future for Humankind: Issues of Law and Policy. Vol.26 in Essential Ail and Space Law series / The Hague: Eleven, 2021. - 460 p. - pp.31-50. URL: <https://www.boomdenhaag.nl/en/webshop/outer-space-future-for-humankind>
2. Payson D., Frolov I. Multi-Level Structure of The International Space Market and Analysis of Labor Productivity in the Rocket and Space Industry //Cosmic Research. 2020. vol. 58. No 3. pp. 218-226. URL: https://www.researchgate.net/publication/341908299_Multi-Level_Structure_of_the_International_Space_Market_and_Analysis_of_Labor_Productivity_in_the_Rocket_and_Space_Industry
3. Payson D. et al. The Mishin Diaries, A New Significant Primary Source of Space History Information // Acta Astronautica.2016. v.123. pp.192-199. <https://www.sciencedirect.com/science/article/abs/pii/S0094576515302551>
4. Payson, D., Davidian, K. Transition of the Russian rocket and space industry // New Space. 2015. vol. 3, No.1, pp. 59-67. URL: <https://www.liebertpub.com/doi/10.1089/space.2014.0028>
5. Payson, D., Makarov, Yu. Russian Space Programs and Industry: Defining the New Institutions for New Conditions //Space Policy. 2009. T. 25. № 2. C. 90-98. URL: <https://www.sciencedirect.com/science/article/abs/pii/S026596460900023X>
6. Payson D.B. Peculiarities of the application of the category of public good to the analysis of performance and institutional design of space activity // Theoretical and Applied Economics. - 2018. - № 4. - C. 1-20. URL: https://e-notabene.ru/etc/article_27646.html (in Russian)
7. Payson D.B. Space Activity: Evolution, Organization, Institutions - M. : Book House LIBROCOM, 2010, 2nd ed. 2013. - 312 p. (in Russian).
8. Payson D.B. Technical policy of creation of space segment of satellite communication systems. - Moscow, MAI, 2005 - 100 p. (in Russian)

Research Sphere

- Institutions and institutional design of space activities.
- Space program management
- Public-private partnership.
- Structure of space markets and value chains.
- Public good theory as applied to fundamental science and space activity.
- Structural reforms of industries.
- Economics of innovation.
- Space history.

RSCI - 84, Hirsch 11 | WoS - 9, Hirsch 2 | Scopus - 18, Hirsch 3

Questions for the Space Economics

1. Space products and services market structure, **borders and double counting**
2. Nature and specifics of the **complex productive functions with the heterogenous products including the public goods.**
3. **Public good measurability / quantification**
(megascience and space exploration economical measurement).
4. Efficiency criteria for the **complex industry/government architecture solutions.**
5. **Incentives and drivers** in the public/private environment



My Courses

Space Exploration Primer

(Introduction history-based course)

1. The Beginning. First rockets and satellites
2. Humans in space. Space Race starts
3. Golden Age of 1960's
4. Moon Race
5. Space settlements: first orbital stations
6. Big crossroad. Salyuts and Space Shuttle
7. Golden Fall. Buran and Mir
8. Big space science. Robotic Solar System exploration
9. Science and applications in the Earth orbit
10. International space station
11. Future of the space exploration
12. Where is the entrance? Starting the space career

<http://press.cosmos.ru/istoriya-i-praktika-kosm-deyat-kurs-payson>

<https://www.youtube.com/playlist?list=PLHCBGdx6NxTuZEjAnQMUR6o2XMwZKXuWI>

Basics of the Space Activities

(13 Master level lectures)

1. Course intro, definitions and principles.
2. Space activities' goals and products, private and public goods.
3. Space actors. Industry/Academia/Government. Public and private involvement. PPP and New Space.
4. Space industry. International status, dynamics and prospects.
5. Space law and regulations.
6. Space programs, planning and strategies.
7. Space economics. Industry structure. Value chains. Research challenges.
8. Space history overview.
9. Space activities of the major global actors: US, ESA/EU, China, India
10. Russian space activities
11. International space market structure, figures and trends.
12. New Space phenomenon and private enterprises.
13. Space activities in the Century XXI: issues, problems, prospects

[**http://www.payson.ru/msu2020-2021/index2021.html**](http://www.payson.ru/msu2020-2021/index2021.html)

Космонавтика

- Для чего нужна
- Как развивалась
- Где вход?

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Космический потенциал



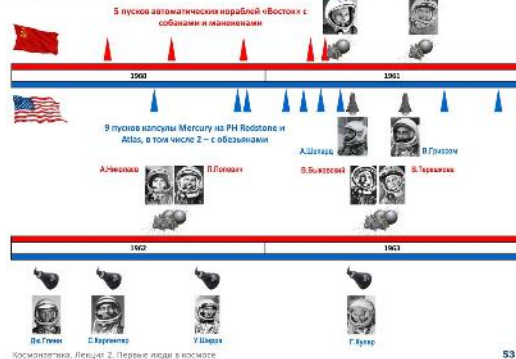
Начало ракетно-космической промышленности



Космонавтика. Лекция 1. Начало

35

1960-1963: «Восток» и Mercury



Космонавтика. Лекция 2. Первые люди в космосе

53

Три космические скорости



Космонавтика. Лекция 2. Начало

29

Владимир Николаевич Челомей (1914—1984)



Космонавтика. Лекция 3. Золотой век

58

Боевая раскраска

- Зачем зубы, пасти и красота боевым самолетам – понятно. А зачем шашечки и полосы наносят на ракеты-носители?



Космонавтика. Лекция 3. Начало

43

Мы и школьная программа

- Движение тела по окружности.
- Закон всемирного тяготения. Три космические скорости.
- Космические орбиты. Конические сечения: эллипс, парабола, гипербола. Законы Кеплера.
- Закон сохранения импульса.
- Формула Циолковского. Движение ракеты.

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The timeline is divided into two main horizontal bands, one for 1955-1961 and another for 1962-1963. The top band (1955-1961) has a red top half and a blue bottom half. It features the Russian flag on the left and the American flag on the right. The bottom band (1962-1963) has a red top half and a blue bottom half. Various events are marked with flags, cones, and portraits of astronauts.

1955

- 5 пусков автоматических кораблей «Восток» с собаками и жвачниками (5 launches of automatic ships «Vostok» with dogs and chewers)

1960

- 9 пусков капсулы Mercury на РН Redstone и Atlas, в том числе 2 – с обезьянами (9 launches of Mercury capsule on Redstone and Atlas, including 2 – with monkeys)

1961

- А.Николаев (A. Nikolayev)
- В.Гарин (V. Garin)
- А.Шварц (A. Schwarz)
- Ю.Бериев (Yu. Beryev)
- В.Григорьев (V. Grigoryev)
- В.Терешкова (V. Tereshkova)

1962

- Ю.Генн (Yu. Genn)
- С.Кермоу (S. Kerrow)

1963

- Г.Шварц (G. Schwarz)
- Г.Юнг (G. Jung)

Воскрешение, Лейтенант З. Первые люди в космосе (Resurrection, Lieutenant Z. First people in space)

20 марта 1961 года Алексей Леонов совершил первый в мире выход в космос

КОРАБЛЬ «ВОСХОД-2»

ОБЩИЕ ДАННЫЕ

- масса корабля: 6 т
- диаметр корабля: 2,5 м
- высота корабля: 4,5 м
- ширина корабля: 4,5 м
- максимальная скорость: 1000 км/ч

ШАССИ «БОГАТ»

- внешний диаметр шасси: 1,2 м
- внутренний диаметр шасси: 1 м
- высота шасси: 2,5 м
- ширина шасси: 2,5 м
- количество приборов: 15

Надпись на корпусе: «Восход-2»

ИСТОЧНИК: www.roskosmos.ru

Three lunar landers are shown: Apollo LEM+CSM (USA), LZ (USSR), and LK-1 (USSR).

A photograph showing two scientists in white lab coats standing next to the Mars rover Spirit on the Martian surface. The rover is a six-wheeled vehicle with a complex mechanical structure, including a camera mast and various scientific instruments. The background is a reddish-brown, rocky landscape under a hazy sky.

[illegible]

esa

Rosetta: Свидание с кометой

Настоящий аппарат Rosetta стартовал 2 марта 2004 г.

Главная цель - научение химии/физики Гелиоцентра для более информирован о том, как зарождалась и эволюционировала Солнечная система.

«Rosetta» достигла кометы летом 2014 года, став первым искусственным аппаратом, который вышел на орбиту кометы.

Спустивший аппарат «Philae» совершил посадку 12 ноября 2014 года в 18:05 мск.

[illegible]

Grand Crossroads: Drivers and Springs of the Major Space Program Decisions



Космическая гонка: взгляд на опыт
великого технологического
противостояния 50 лет спустя

SPACE RACE: A LOOK AT THE GREAT TECHNOLOGY CONFRONTATION

2 hour lecture about key issues and
decisions that led to the Soviet
Union's lost in the Moon Race



Конец космической гонки: предотвращая
стратегическую внезапность

THE END OF THE SPACE RACE: PREVENTING THE STRATEGIC SUDENNESS

2 hour lecture about Energia-Buran
program roots and destiny